

CLAIMS

What is claimed is:

1. A junction plate for hydraulic couplings comprising:
 - a cam actuator;
 - a drive mechanism coupled to the cam actuator; and,
 - a cam carrier with at least one cam follower.
2. A junction plate as recited in claim 1 wherein the cam actuator comprises a handle.
3. A junction plate as recited in claim 2 wherein the handle is a T-handle.
4. A junction plate as recited in claim 1 wherein the cam actuator comprises a crank.
5. A junction plate as recited in claim 1 wherein the cam actuator comprises a hex adapter.
6. A junction plate as recited in claim 1 wherein the drive mechanism comprises a gear train.
7. A junction plate as recited in claim 6 wherein the drive mechanism comprises a driven gear that makes less than one complete revolution for each complete revolution of the cam actuator.
8. A junction plate as recited in claim 1 wherein the cam follower comprises a roller.
9. A junction plate as recited in claim 1 wherein the cam follower is integral with the cam carrier.
10. A junction plate as recited in claim 1 further comprising a handle for manipulating the junction plate.
11. A junction plate assembly for hydraulic couplings comprising:

- a generally circular removable body;
- a cam actuator mounted on the removable body;
- a drive mechanism coupled to the cam actuator;
- a ring gear on the circumference of the removable body engaged with the drive mechanism;
- at least one cam follower on the outer circumference of the ring gear;
- a generally circular fixed plate;
- a generally cylindrical wall having a first end and a second end attached to the fixed plate;
- a generally ring-shaped cam track carrier mounted to the interior circumference of the cylindrical wall proximate the first end; and
- an inclined cam track in the cam track carrier sized to accommodate the cam follower.

12. A junction plate assembly as recited in claim 11 wherein the generally cylindrical wall is integral with the generally circular fixed plate.

13. A junction plate assembly as recited in claim 11 wherein the cam track carrier is integral with the generally cylindrical wall.

14. A junction plate assembly as recited in claim 11 further comprising an entrance slot in the cam track carrier contiguous with the cam track and open at one end to the first end of the cylindrical wall.

15. A junction plate assembly for hydraulic couplings comprising:

- a generally circular removable junction plate;
- a shaft rotatably mounted on the removable plate;
- a driver gear attached to the shaft;
- at least one idler gear engaged with the driver gear;
- at least one driven gear engaged with an idler gear;
- a ring gear on the circumference of the removable body engaged with the driven gear;
- at least one cam follower on the outer circumference of the ring gear

a generally circular fixed junction plate;
a generally cylindrical wall having a first end and a second end attached to the fixed plate;
a generally ring-shaped cam track carrier mounted to the interior circumference of the cylindrical wall proximate the first end; and
an inclined cam track in the cam track carrier sized to accommodate the cam follower.

16. A junction plate assembly as recited in claim 15 further comprising at least one guide pin mounted to the fixed junction plate and at least one receptacle on the removable junction plate for receiving the guide pin.

17. A junction plate assembly as recited in claim 15 further comprising at least one guide pin mounted to the removable junction plate and at least one receptacle on the fixed junction plate for receiving the guide pin.

18. A junction plate assembly as recited in claim 16 wherein the receptacle comprises a hole through the junction plate.